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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 18061.0-D2787-klp-54	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/EP2004/013158	International filing date *(day/month/year)* 19.11.2004	Priority date *(day/month/year)* 21.11.2003
International Patent Classification (IPC) or national classification and IPC H04Q7/38		
Applicant T-MOBILE DEUTSCHLAND GMBH et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of five sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
08.06.2005	24.02.2006
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Rabe, M Telephone No. +49 89 2399-8801

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/013158

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1, 2, 4-9	as originally filed
3, 3a	received on 20.09.2005 with letter of 16.09.2005

Claims, Numbers

1-8	received on 19.01.2006 with letter of 17.01.2006

Drawings, Sheets

1/3-3/3	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-8
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-8
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-8
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Reference is made to the following documents:

D1: US 6 138 011 A
D2: US 2003/0100326 A1
D3: ETSI TS 143 068 V5.2.0 (2002-12), "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS); Stage 2 (3GPP TS 43.068 version 5.2.0 Release 5)

Citations and explanations made in respect of paragraph V:

1. The present invention relates to a **method** for transmitting text- and/or binary information in addition to voice information as well as to a corresponding mobile communication **system** according to the preambles of respective **independent claims 1 and 8.**

2. **Generally**, in the field of wireless technology, Voice Group Call (VGC) Service is a call that can be established between members of a group in numerous cells of a mobile telecommunication network simultaneously, wherein the cells define the service area and all subscribers belonging to the group have the possibility to listen to the call in the service area or to participate in the call individually.

   Document **D1** discloses a method and apparatus for providing a dispatch service to an existing telephone network, wherein text- and/or binary information is transmitted in addition to voice information for a talker and at least one listener of a Voice Group Call, comprising sending a special dedicated signal to all listeners and to the talker.

   Furthermore, document **D2** describes a group location and route sharing system for communication units in a trunked communication system, wherein the communication units are engaged in a group voice call communication, and wherein subscription and location data can be sent as a supplementary information to the group voice call communication by using an underlying packet transport layer.

   The standards of the Voice Group Call (VGC) Service are specified in document **D3**.

3. It is an object of the present invention to further enhance the known VGC Service by providing an additional communication service.

4. This object is met by the **present invention** which provides a **method** for transmitting text- and/or binary information in addition to voice information and a corresponding mobile communication **system** according to the characterizing features of respective **independent claims 1 and 8**.

   According to the **essential features of the invention**, the short message is sent to the listeners in **unacknowledged** mode and the listeners are addressed by an **associated** VGC reference, wherein the short message can be sent and received **simultaneous** to an ongoing voice group call and has the **structure of** a regular Point-to-Point-SMS in parallel to an ongoing Point-to-Point-voice- or Point-to-Point-circuit-switched-data-call.

5. The present invention provides the **advantage** of providing an additional communication service to the known VGC Service without changing the general archi-tecture if the communication network.

6. The subject-matter of the present invention as claimed in respective independent claims 1 and 8 is thus neither disclosed in, nor rendered obvious by the **prior art documents** cited in the international search report (ie. above documents **D1 to D3**) since said documents do **not** describe or render (in combination) obvious the method and system according to the particular feature combination of the present invention or part thereof as defined in said respective claims 1 and 8.

7. The subject-matter of independent claims 1 and 8 therefore is considered to be **new** and to **involve an inventive step**, Article 33 (2) and (3) PCT.

8. As **claims 2 to 7** are dependent on claim 1, said claims 2 to 7 do **also meet** the requirements of Article 33 (2) and (3) PCT.

9. The present invention is **susceptible of industrial application**, Article 33 (4) PCT.

is a downlink to be allocated in each cell of the group call area for a particular voice group call. All mobile stations (listeners) being service subscribers for that Voice Group Call in one cell listen to the common downlink. Of course it is possible to change the talker at any time, so that one of the listeners of the group becomes the talker and the previous talker becomes a listener.

The standards of Voice Group Call Service are specified in the technical specification ETSI TS 143 069, V5.2.0, December 2002: "Digital cellular telecommunication system (Phase 2+); Voice Group Call Service (VGCS); Stage 2; 3GPP TS 43.068 version 5.2.0 Rel. 5.

US 6 138 011 A discloses a method and apparatus for providing dispatch service to an existing telephone network, wherein in addition to dispatch or group voice communications also dispatch or group short message service is facilitated.

US 2003/0100326 A1 relates to a group location and route sharing system for communication units in a trunked communication system, wherein the communication units are engaged in a group voice call communication. Subscription and location data can be sent as a supplementary information to the group voice call communication by using an underlying packet transport layer.

It is the object of the invention to enhance the conventional voice group call service by providing an additional communication service without changing the general architecture of the communication network.

This object is achieved by providing a method and a communication system as disclosed in the independent claims.

Other features which are considered to be characteristic for the invention are set forth in the appended claims.

The short message (SM) for voice group call service according to the present invention is designed to provide all listeners of a voice group call with additional text- or binary-information via short message service. Preferably this is done by sending a short message mobile terminated (SM MT) to all listeners and to the talker of the group, preferably in unacknowledged mode.
The text- and/or binary message can be sent and received simultaneous to an ongoing group call.

The receiving of the SM by group members currently not partaking in the listener mode or talker mode, but

16.01.2006

Patent claims

1. Method for transmitting text- and/or binary information in addition to voice information for a talker - if present - and at least one listener of a Voice Group Call, VGC, by sending a special, dedicated signal to all listeners and to the talker, wherein the special dedicated signal is a short message mobile terminated, SM MT, characterized in that
the Short Message is sent to the listeners in unacknowledged mode and the listeners are addressed by an associated Voice Group Call reference, VGC-reference, wherein the Short Message can be sent and received simultaneous to an ongoing voice group call and follows the structure of a regular Point-to-Point-SMS in parallel to an ongoing Point-to-Point-voice- or Point-to-Point-circuit switched-data-call.

2. Method according to claim 1, characterized in that the Short Message is send from the current talker to the network in form of a short message mobile originated, SM MO.

3. Method according to claim 2, characterized in that the SM MO is sent in acknowledged mode.

4. Method according to any of claims 1-3, characterized in that if the current talker is sending a Short Message via a Mobile Station (22, 24, 26) and during the sending the talker intends to end his speaking, the

Mobile Station will hold the uplink until the Short Message is sent completely to the network.

5. Method according to any of claims 1-4, characterized in that a Short Message Entity, SME, in the network requests a Short Message Service Center, SC, (20) to send a SM to the members of a VGC, the SC (20) interrogates a Group Call Register, GCR, (10a, 10b, 10c) in order to retrieve the routing information of an Anchor-Mobile Switching Center, Anchor-MSC, (12a) for this VGC, the SC forwards the SM to an appointed Anchor-MSC for this VGC, the Anchor-MSC itself forwards the SM to all base station subsystems, BSS, partaking in the VGC and in addition to all Relay-MSCs (12b, 12c), the Relay-MSCs send the SM to all respective BSS for this VGC, which transmit it to the listeners.

6. Method according to any of claims 1-5, characterized in that the current talker sends a SM via a Slow Associated Control Channel, SACCH, of an respective uplink-channel on a resource controlling signalling connection control part, SCCP, to the MSC (12a) analogue to the sending of a PtP-SMS via the respective SACCH, where the destination of the SM can be either a Mobile Subscriber ISDN, MSISDN, or a VGC-reference.

7. Method according to any of claims 1-6, characterized in that by using the MSISDN the SM is forwarded to the SC (20) and there it is handled according to normal PtP-SM.

8. Mobile communication system with at least one logical unit for controlling signal exchange between the members of a Voice Call Group, VCG, and with additional functional processing means for transmitting text- and/or binary information to one or more users of the Voice Group, wherein the text- and/or binary information is a short message, SM, characterized in that the short message is assigned a associated Voice Group Call reference, VGC-reference, for addressing the members of the VCG and has the structure of a regular Point-to-Point-SMS to be transmitted in parallel and simultaneous to an ongoing Point-to-Point-voice- or Point-to-Point-circuit switched-data-call.